

REMARKS

Please reconsider the present application in view of the above amendments and the following remarks. Applicant thanks the Examiner for carefully considering the present application.

I. Disposition of Claims

Claims 1-20 are pending in the present application. Claim 1 has been amended. Claim 20 has been cancelled without prejudice or disclaimer.

II. Amendments to the Specification

The paragraph beginning on page 15, line 32 and ending on page 16, line 17 of the Specification has been amended to correct a mathematical calculation error. The water resulting from a mixture of permeated water (on the upstream side of the first pressure vessel) having a TDS (total dissolved solids) concentration of 110 mg/l and permeated water (from the second pressure vessel) having a TDS concentration of 16 mg/l in a 1.6 : 1 by volume ratio has a TDS concentration of 74 mg/l $((110 \text{ mg/l} * 1.6) + (16 \text{ mg/l} * 1)) / (1.6 + 1)$, not 300 mg/l as stated in the Specification prior to this reply.

No new matter has been added by way of this amendment.

III. Claim Amendments

Independent claim 1 has been amended to incorporate the limitations of now cancelled claim 20. No new matter has been added by way of this amendment.

IV. Rejection(s) Under 35 U.S.C § 102

Supplemental Office Action of February 21, 2003

In the supplemental Office Action of February 21, 2003, claims 1, 2, 4, 5, 11, 12, 15, and 16 were rejected under 35 U.S.C. § 102(b) as being anticipated by Japanese reference 11-10146 (hereinafter “JP 146”). For the reasons set forth below, this rejection is respectfully traversed.

The present application is directed toward a water treatment apparatus. The water treatment apparatus, with reference to Figure 1 and according to claim 1 of the present application, requires a plurality of composite reverse osmosis membrane modules **5** and **11** arranged in multi-stages, where each of the plurality of modules **5** and **11** includes a porous support and a polyamide skin layer formed on the porous support, where the plurality of modules **5** and **11** include a final-stage module **11** and at least one pre-final module **5**, where a selected portion **7** and **10** of permeated water obtained from the at least one pre-final module **5** is supplied to the final-stage module **11**, and where the rest **6** of the permeated water is discharged from or recovered in the water treatment apparatus along with the permeated water **12** obtained from the final-stage module **11**. Moreover, claim 1 of the present application has been amended to incorporate the limitations of now cancelled claim 20, namely that a polyamide skin layer of the at least one pre-final module **5** comprises bromine atoms.

JP 146, in contrast to the present invention, fails to disclose an arrangement as recited in amended independent claim 1 of the present application. JP 146 fails to disclose or teach that a polyamide skin layer in a pre-final module comprises bromine

atoms.

In view of the above, JP 146 fails to show or suggest the present invention as recited in amended independent claim 1. Thus, amended claim 1 is patentable over JP 146. Dependent claims are allowable for at least the same reasons. Accordingly, withdrawal of the § 102 rejection is respectfully requested.

V. Rejection(s) Under 35 U.S.C § 103

Supplemental Office Action of February 21, 2003

In the supplemental Office Action of February 21, 2003, claims 13, 14, and 20 were rejected under 35 U.S.C. § 103(a) as being unpatentable over JP 146 in view of European Patent Application No. 1 136 116 A1 (hereinafter “EP 116”). For the reasons set forth below, this rejection is improper.

EP 116 has a publication date of September 26, 2001. The present application has a filing date of February 13, 2001. Thus, EP 116 cannot be used in a § 103 rejection of the claims in the present application because EP 116 is not a proper prior art reference under any of the sections in 35 U.S.C. § 102. Accordingly, a § 103 rejection based in whole or in part on EP 116 is improper, and thus, withdrawal of the § 103 rejection of claims 13, 14, and 20 is respectfully requested.

In the supplemental Office Action of February 21, 2003, claims 3, 6-10, 17, and 18 were rejected under 35 U.S.C. § 103(a) as being unpatentable over JP 146 in view of U.S. Patent No. 4,046,685 issued to Bray (hereinafter “Bray”). For the reasons set forth below, this rejection is respectfully traversed.

As discussed above, independent claim 1 has been amended to incorporate the limitations of now cancelled claim 20. Further, as discussed above, JP 146 fails to show or suggest each and every limitation of amended independent claim 1. Bray, like JP 146, is silent as to a polyamide skin layer in a pre-final module comprising bromine atoms as required by amended independent claim 1.

In view of the above, JP 146 and Bray, whether considered in combination or separately, fail to show or suggest the present invention as recited in amended independent claim 1, and accordingly, cannot render amended claim 1 obvious. Thus, amended claim 1 is patentable over JP 146 and Bray. Dependent claims 3, 6-10, 17, and 18 are allowable for at least the same reasons. Accordingly, withdrawal of this rejection is respectfully requested.

In the supplemental Office Action of February 21, 2003, claim 19 was rejected under 35 U.S.C. § 103(a) as being unpatentable over JP 146 in view of Bray as applied to claim 3 above and further in view of EP 116. Because, as discussed above, EP 116 is not a proper prior art reference against the claims of the present application, the § 103 rejection of claim 19 is improper, and accordingly, withdrawal of this rejection is respectfully requested.

Office Action of February 4, 2003

In the Office Action of February 4, 2003, claims 1, 2, 4, and 5 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,997,745 issued to Tonelli et al. (hereinafter “Tonelli”) in view of U.S. Patent No. 6,113,797 issued to Al-

Samadi (hereinafter “Al-Samadi”). For the reasons set forth below, this rejection is respectfully traversed.

Both Tonelli and Al-Samadi are silent as to a polyamide skin layer of a pre-final module comprising bromine atoms as required by amended independent claim 1 of the present application. In fact, the Examiner stated on page 4 of the Office Action of February 4, 2003 that “Tonelli in view of Al-Samadi ... does not disclose the performance values of the membranes used for seawater and for rejection of Boron.”

In view of the above, Tonelli and Al-Samadi, whether considered in combination or separately, fail to show or suggest the present invention as recited in amended independent claim 1, and accordingly, cannot render amended claim 1 obvious. Thus, amended claim 1 is patentable over Tonelli and Al-Samadi. Dependent claims 2, 4, and 5 are allowable for at least the same reasons. Accordingly, withdrawal of this rejection is respectfully requested.

In the Office Action of February 4, 2003, claims 3 and 6-10 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Tonelli in view of Al-Samadi as applied to claim 1 and further in view of Bray. For the reasons set forth below, this rejection is respectfully traversed.

As discussed above, Bray fails to disclose or teach that a polyamide skin layer of a pre-final module comprises bromine atoms. Accordingly, Bray fails to show or suggest the limitations of amended independent claim 1 not taught by Tonelli and Al-Samadi.

In view of the above, Tonelli, Al-Samadi, and Bray, whether considered in any combination or separately, fail to show or suggest the present invention as recited in

amended independent claim 1, and accordingly, cannot render amended claim 1 obvious. Thus, amended claim 1 is patentable over Tonelli, Al-Samadi, and Bray. Dependent claims 3 and 6-10 are allowable for at least the same reasons. Accordingly, withdrawal of this rejection is respectfully requested.

In the Office Action of February 4, 2003, claims 11-16 and 20 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Tonelli in view of Al-Samadi as applied to claim 1 above and further in view of EP 116. Because, as discussed above, EP 116 is not a proper prior art reference against the claims of the present application, the § 103 rejection of claim 11-16 and 20 in the Office Action of February 4, 2003 is improper, and accordingly, withdrawal of this rejection is respectfully requested.

In the Office Action of February 4, 2003, claims 17-19 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Tonelli in view of Al-Samadi and Bray as applied to claim 3 above and further in view of EP 116. Because, as discussed above, EP 116 is not a proper prior art reference against the claims of the present application, the § 103 rejection of claim 17-19 in the Office Action of February 4, 2003 is improper, and accordingly, withdrawal of this rejection is respectfully requested.

VI. Conclusion

Applicant believes this reply to be fully responsive to all outstanding issues and place this application in condition for allowance. If this belief is incorrect, or other issues arise, do not hesitate to contact the undersigned or his associates at the telephone number listed below. Please apply any charges not covered, or any credits, to Deposit Account 50-0591 (Reference Number 04558.048001).

Respectfully submitted,

Date: 5/20/03

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